

=> FIL REG

FILE 'REGISTRY' ENTERED AT 13:30:53 ON 09 SEP 2009
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=> D HIS

FILE 'HCAPLUS' ENTERED AT 11:27:18 ON 09 SEP 2009
E US2004-509944/APPS
L1 1 S E3
SEL L1 RN

FILE 'REGISTRY' ENTERED AT 11:27:34 ON 09 SEP 2009
L2 60 S E1-60

FILE 'HCAPLUS' ENTERED AT 11:29:50 ON 09 SEP 2009
E KONEMANN M/AU
L3 4 S E4
E GESSNER T/AU
L4 280 S E3 OR E6-E9
E SENS R/AU
L5 143 S E3 OR E5-E6
E LENNARTZ C/AU
L6 42 S E3 OR E5
E SEYBOLD G/AU
L7 107 S E3 OR E9-E10
L8 560 S L3-L7
E BASF AKTIEN/CO
E E8+ALL
L9 6380 S E1-E2/CO,CS,PA

FILE 'REGISTRY' ENTERED AT 11:46:19 ON 09 SEP 2009
L10 3 S L2 AND ?DIMETHYL?/CNS
E C30 H20 N8/MF
L11 1 S E3 AND L2

FILE 'LREGISTRY' ENTERED AT 13:17:02 ON 09 SEP 2009
L12 STR 615286-74-3

FILE 'REGISTRY' ENTERED AT 13:22:13 ON 09 SEP 2009
L13 0 S L12

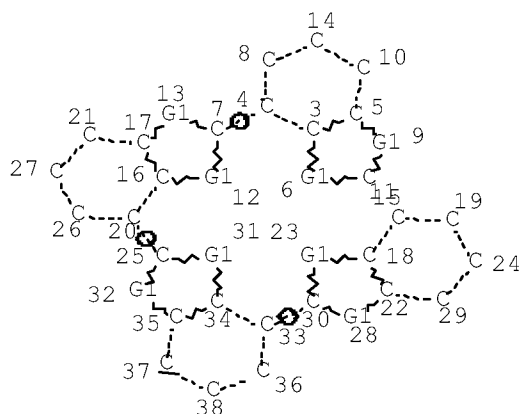
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L15 STR L12

FILE 'REGISTRY' ENTERED AT 13:26:33 ON 09 SEP 2009
L16 0 S L15
L17 8 S L15 FUL
SAV L17 ANT944/A

FILE 'HCAPLUS' ENTERED AT 13:27:58 ON 09 SEP 2009
L18 5 S L17
L19 2 S L18 AND (L8 OR L9)
L20 3 S L18 NOT L19

FILE 'REGISTRY' ENTERED AT 13:30:53 ON 09 SEP 2009

=> D L17 QUE STAT
L15 STR



VAR G1=N/O/S
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 36

STEREO ATTRIBUTES: NONE
L17 8 SEA FILE=REGISTRY SSS FUL L15

100.0% PROCESSED 130608 ITERATIONS
SEARCH TIME: 00.00.04

8 ANSWERS

=> FIL HCAP
FILE 'HCAPLUS' ENTERED AT 13:31:11 ON 09 SEP 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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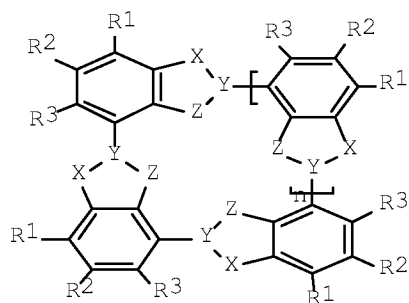
=> D L19 1-2 IBIB ABS HITSTR HITIND RETABLE

L19 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:818426 HCAPLUS Full-text
DOCUMENT NUMBER: 139:323547
TITLE: Preparation of cyclic compounds and the use
thereof as light absorbers, light emitters, or
complex ligands
INVENTOR(S): Koenemann, Martin; Gessner, Thomas;
Sens, Ruediger; Lennartz,
Christian; Seybold, Guenther
PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany

SOURCE: PCT Int. Appl., 75 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003084960	A1	20031016	WO 2003-EP3538	20030404
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10214937	A1	20031016	DE 2002-10214937	20020404
AU 2003232197	A1	20031020	AU 2003-232197	20030404
EP 1495025	A1	20050112	EP 2003-745787	20030404
EP 1495025	B1	20061220		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005538042	T	20051215	JP 2003-582157	20030404
AT 348832	T	20070115	AT 2003-745787	20030404
US 20050167637	A1	20050804	US 2004-509944	20041004
PRIORITY APPLN. INFO.:			DE 2002-10214937	A 20020404
			WO 2003-EP3538	W 20030404

OTHER SOURCE(S): CASREACT 139:323547; MARPAT 139:323547
 GI



I

AB Disclosed is the use of cyclic compds. I [n = 1 - 7; X-Y-Z independently represent O-C:N, N:C-O, NR5-C:N, N:C-NR5, N+(R5)2-C:N, N:C-N+(R5)2, O-C:N+R5,

N+R5:C-O, S-C:N+R5, N+R5:C-S, S-C:N, N:C-S; R1, R2, R3 = H, C1-12-alkyl, C1-12-alkanoyl, C3-12-cycloalkyl, C6-12-aryl, , C7-13-aralkyl, C7-13-alkaryl, C1-12-alkoxy, C6-12-aryloxy, C1-12-hydroxyalkyl, heterocycle, C6-12-aroyl; R1R2, R2R3 = 1 - 3-membered carbocycle or heterocycle; R5 = H, (un)substituted C1-12-alkyl, C6-12-aryl, C7-13-alkylaryl, C1-12-alkanoyl, C7-13-aroyl, oligoethylene glycol or ether (with 1 - 6 oxygens), imidazolylmethyl, etc.; R7 = H, C1-12-alkyl, C6-12-aryl], tautomers, or metal complexes of the cyclic compds. or complexes of the cyclic compds. comprising mineral acids, X- (X = chloride, sulfate, hydrogen sulfate, phosphate, hydrogen phosphate, nitrate, BF4-, methanesulfonate) being supplied as counterions in cationic cycles, as light absorbers, materials for hole-injection layers in OLEDs, light-emitting compds. in OLED, phase transfer catalysts, synergists for dispersing pigments or for optical data storage. Also disclosed is a procedure for the preparation of I via cyclization of benzene derivs. II (R4 = CO2H; n = 1, 2; X = N; Z = N, O; whereby the OH group as the alkali metal or ammonium salt and/or the NH2 group either protonated or as NO, NO2, N:N-aryl, :NOH, :NH) is cyclized in the presence of a metal salt or powder. Thus, cyclo-2,4':2'7':2'',4''':2''',7-quaterbenzimidazole (I; XYZ = NHC:N, R1 - R3 = H, n = 1) was prepared from ammonium 2,3-diaminobenzoate by heating to 100° in the presence of 85% polyphosphoric acid.

IT 612805-99-9P 612806-02-7P 612806-07-2P
612838-52-5P 615286-74-3P 615286-83-4P

, Cycloquaterbenzoxazole

(preparation and use of, in OLED's; preparation of cyclic compds. for use

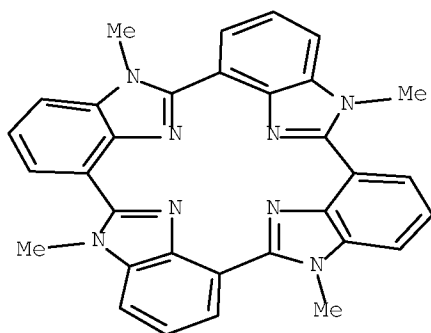
as

light absorbers, light emitters, or complex ligands)

RN 612805-99-9 HCAPLUS

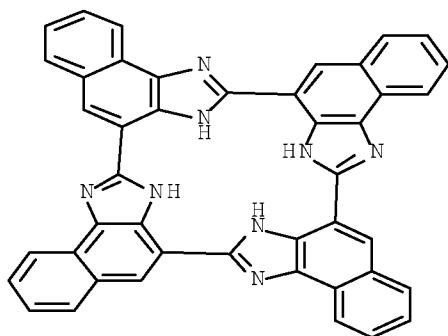
CN 4,6:10,12:16,18:22,24-

Tetraiminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine,
25,26,27,28-tetramethyl- (9CI) (CA INDEX NAME)



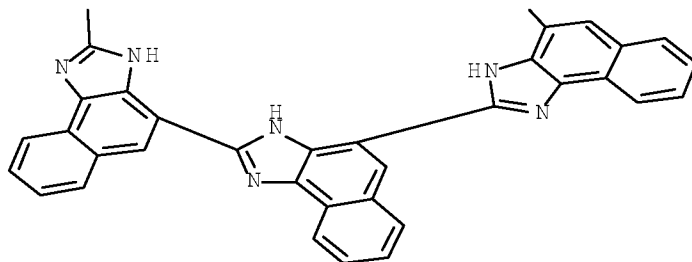
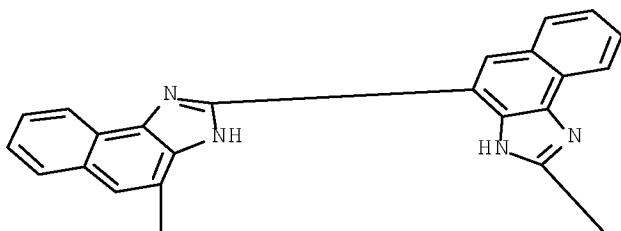
RN 612806-02-7 HCAPLUS

CN 5,7:13,15:21,23:29,31-Tetraiminotetranaphtho[2,3-b:2',3'-f:2'',3'''-j:2''',3''''-n][1,5,9,13]tetraazacyclohexadecine (CA INDEX NAME)



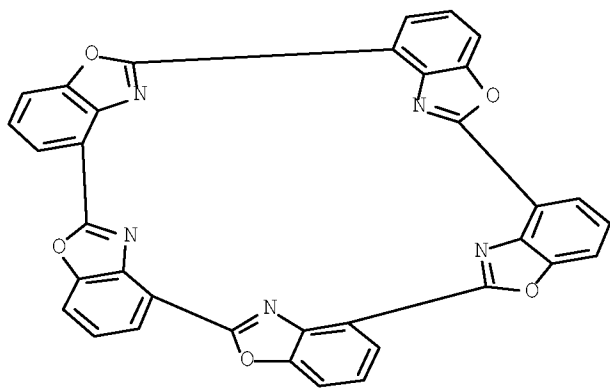
RN 612806-07-2 HCAPLUS
 CN 5,7:13,15:21,23:29,31:37,39-Pentaiminopentanaphtho[2,3-b:2',3'-
 f:2'',3''-j:2''',3'''-n:2''',3'''-r][1,5,9,13,17]pentaazacycloeicosine (9CI) (CA INDEX NAME)

PAGE 1-A

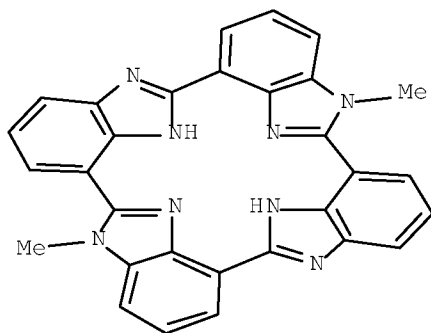


PAGE 2-A

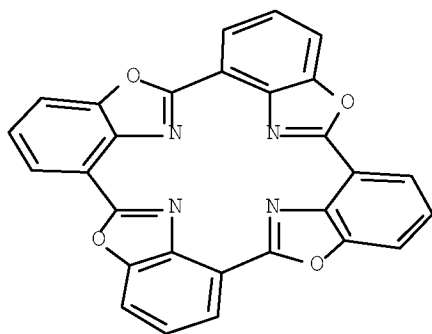
RN 612838-52-5 HCAPLUS
 CN 4,6:10,12:16,18:22,24:28,30-
 Pentaepoxypentabenzo[b,f,j,n,r][1,5,9,13,17]pentaazacycloeicosine
 (9CI) (CA INDEX NAME)



RN 615286-74-3 HCAPLUS
 CN 4,6:10,12:16,18:22,24-
 Tetraiminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine,
 25,27-dimethyl- (9CI) (CA INDEX NAME)



RN 615286-83-4 HCAPLUS
 CN 4,6:10,12:16,18:22,24-
 Tetraepoxytetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine (9CI)
 (CA INDEX NAME)



IT 612805-98-8P

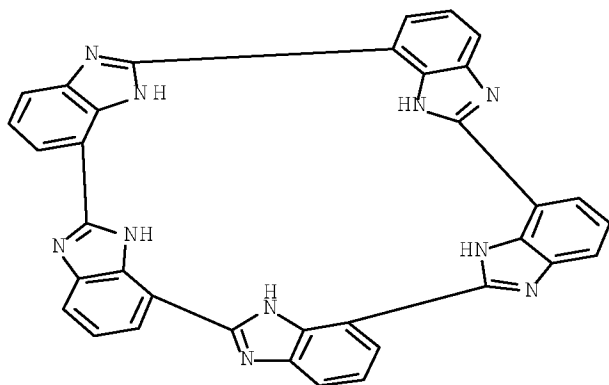
(preparation, metalation and use of, in OLED's; preparation of cyclic compds.

for use as light absorbers, light emitters, or complex ligands)

RN 612805-98-8 HCAPLUS

CN 4,6:10,12:16,18:22,24:28,30-

Pentaminopentabenzobenzimidazole [1,5,9,13,17]pentaazacycloeicosine
(9CI) (CA INDEX NAME)



IT 25797-72-2P, Cyclo-2,4':2'',7''':2''',4''':2''',7-
quaterbenzimidazole

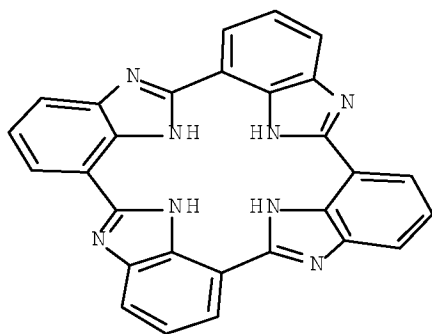
(preparation, methylation or metalation and use of, in OLED's; preparation of

cyclic compds. for use as light absorbers, light emitters, or complex ligands)

RN 25797-72-2 HCAPLUS

CN 4,6:10,12:16,18:22,24-

Tetraaminotetrabenzobenzimidazole [1,5,9,13]tetraazacyclohexadecine (CA
INDEX NAME)



IC ICM C07D0487-22
 ICS C07D0498-22; C07D0513-22; H01L0051-30; B01J0031-02; C09B0067-00;
 A61K0007-40; C07D0257-00; C07D0235-00; C07D0259-00
 CC 28-23 (Heterocyclic Compounds (More Than One Hetero Atom))
 Section cross-reference(s): 29, 62, 67, 73, 78
 IT 27199-20-8P 467231-63-6P ~~612805-99-9P~~ 612806-00-5P
 612806-01-6P ~~612806-02-7P~~ 612806-04-9P
~~612806-07-2P~~ ~~612838-52-5P~~ 613263-87-9P
 613263-88-0P 613263-89-1P 613263-90-4P 613680-00-5P
 613680-01-6P 613680-02-7DP, 1.3 degree of substitution
 613680-03-8DP, 8.2 degree of substitution 613680-04-9P
 613680-05-0P 613680-06-1P 613680-07-2DP, homologs 613680-08-3DP,
 homologs 613680-09-4P 613680-10-7P 613680-11-8P 613680-12-9P
~~615286-74-3P~~ ~~615286-83-4P~~, Cycloquaterbenzoxazole
 (preparation and use of, in OLED's; preparation of cyclic compds. for use
 as
 light absorbers, light emitters, or complex ligands)
 IT ~~612805-98-8P~~
 (preparation, metalation and use of, in OLED's; preparation of cyclic
 compds.
 for use as light absorbers, light emitters, or complex ligands)
 IT 25797-72-2P, Cyclo-2,4':2'',7''':2'',4''':2''',7-
 quaterbenzimidazole
 (preparation, methylation or metalation and use of, in OLED's; preparation
 of
 cyclic compds. for use as light absorbers, light emitters, or
 complex ligands)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Nichols, L	1969			US 3481945 A	HCAPLUS
Obermayer, A	1993			US 5180821 A	HCAPLUS
Tauer, E	2002		723	SYNTHESIS	HCAPLUS
OS.CITING REF COUNT:	2	THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)			

L19 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2003:656774 HCAPLUS Full-text
 DOCUMENT NUMBER: 139:197511
 TITLE: Preparation of cyclic compounds for use as complex
 ligands
 INVENTOR(S): Tauer, Erich
 PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany

SOURCE: PCT Int. Appl., 22 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003068779	A1	20030821	WO 2003-EP1490	20030214
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10206366	A1	20030828	DE 2002-10206366	20020215
AU 2003205767	A1	20030904	AU 2003-205767	20030214
EP 1476447	A1	20041117	EP 2003-702641	20030214
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005525343	T	20050825	JP 2003-567906	20030214
US 20050159596	A1	20050721	US 2004-503587	20040812
PRIORITY APPLN. INFO.:			DE 2002-10206366	A 20020215
			WO 2003-EP1490	W 20030214

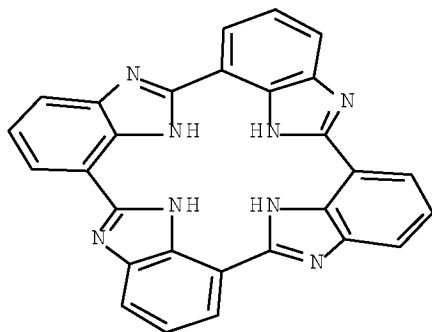
OTHER SOURCE(S): MARPAT 139:197511

AB Macrocycles I [X-Y-Z = N:CO, NHC:N, N:CNH; R1-R3 = H, alkyl] and their acyclic analogs II were prepared for use as complex ligands (no data). Thus, 2,3-HO(O2N)C6H3CO2Me was converted to 2,3-HO(O2N)C6H3CONH2, reduced to 2,3-HO(H2N)C6H3CONH2 and cyclized with polyphosphoric acid to give I [X-Y-Z = N:CO, R1-R3 = H]. II [R1-R3 = H] was similarly prepared

IT 25797-72-2P
 (preparation of cyclic compds. for use as complex ligands)

RN 25797-72-2 HCAPLUS

CN 4,6:10,12:16,18:22,24-Tetraiminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine (CA INDEX NAME)



IC ICM C07D0498-22
ICS C07D0487-22; C07D0263-62; C07D0323-00; C07D0263-00; C07D0257-00;
C07D0235-00

CC 28-23 (Heterocyclic Compounds (More Than One Hetero Atom))

IT 25797-72-2P 467231-63-6P 467231-66-9P,
7,7':2',2'':7'',7'''-Quaterbenzoxazole
(preparation of cyclic compds. for use as complex ligands)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Gitina, R	1966	8	1535	VYSOKOMOLEKUL SOEDIN	HCAPLUS
Liechti, P	1971			US 3575996 A	
Nichols, L	1969			US 3481945 A	HCAPLUS
Obermayer, A	1993			US 5180821 A	HCAPLUS
Tauer, E	2002		723	SYNTHESIS	HCAPLUS

=> D L20 1-3 IBIB ABS HITSTR HITIND RETABLE

L20 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2002:370210 HCAPLUS Full-text

DOCUMENT NUMBER: 137:279132

TITLE: Preparation of new cyclic quaterbenzoxazole and
-imidazole derivatives

AUTHOR(S): Tauer, Erich

CORPORATE SOURCE: Max-Planck-Institut fur biophysikalische Chemie,
Abteilung Spektroskopie und Photochemische
Kinetik, Gottingen, 37070, Germany

SOURCE: Synthesis (2002), (6), 723-725

CODEN: SYNTBF; ISSN: 0039-7881

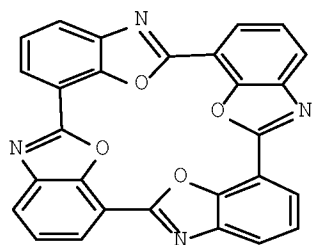
PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

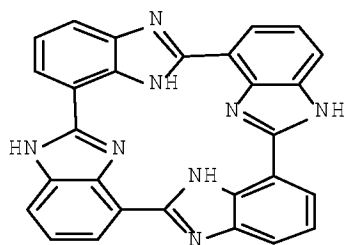
LANGUAGE: English

OTHER SOURCE(S): CASREACT 137:279132

GI



I



II

AB The new cyclic quaterbenzoxazole I and -imidazole II have been synthesized by cyclization of 3-amino-2-hydroxybenzamide and the ammonium salt of 2,3-diaminobenzoic acid with polyphosphoric acid. Both compds. represent a new

heterocyclic nine ring system, which can be built up from four identical (or different) benzo-x-azoles in a cyclic arrangement.

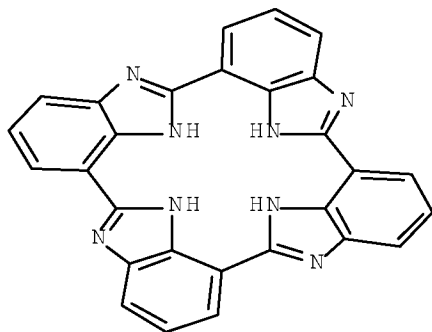
IT 25797-72-2P

(preparation of new cyclic quaterbenzoxazole and imidazole derivs. via cyclization of 3-amino-2-hydroxybenzamide and the ammonium salt of 2,3-diaminobenzoic acid)

RN 25797-72-2 HCAPLUS

CN 4,6:10,12:16,18:22,24-

Tetraiminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine (CA INDEX NAME)



CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))

IT 25797-72-2P 467231-63-6P 467231-66-9P,

7,7':2',2'':7'',7'''-Quaterbenzoxazole

(preparation of new cyclic quaterbenzoxazole and imidazole derivs. via cyclization of 3-amino-2-hydroxybenzamide and the ammonium salt of 2,3-diaminobenzoic acid)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Denny, W	1990	33	814	J Med Chem	HCAPLUS
Diels, O	1902	35	302	Ber Dtsch Chem Ges	HCAPLUS
Grellmann, K	1974		375	Tetrahedron Lett	HCAPLUS
Meldrum, A	1928	5	95	J Indian Chem Soc	HCAPLUS
Wu, M	1971	8	989	J Heterocycl Chem	HCAPLUS

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

L20 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1993:449390 HCAPLUS Full-text

DOCUMENT NUMBER: 119:49390

ORIGINAL REFERENCE NO.: 119:8965a,8968a

TITLE: Cyclic tetrabenzimidazole

INVENTOR(S): Obermayer, Arthur S.; Hendrickson, James B.; Hussoin, Sajjat

PATENT ASSIGNEE(S): Moleculon Research Co., USA

SOURCE: U.S., 6 pp. Cont. of U.S. Ser. No. 725,88, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5180821	A	19930119	US 1992-847835	19920309
PRIORITY APPLN. INFO.:			US 1990-464998	B1 19900116
			US 1991-725883	B1 19910628

OTHER SOURCE(S): CASREACT 119:49390

AB The title compound I is yellowish, visually nonfluorescent, of mol. weight approx. 464, m.p. > 350°, with slight solubility in 1:1 EtOH:CHCl₃, and possesses characteristic IR absorption bands (cm⁻¹, in KBr) at 1620, 1550, 1450, 1400, and 1260. I is useful as a chelating agent (Cu complex prepared), a catalyst, and an electrooptic component (no data). I is prepared from 2,3-diaminobenzoic acid (II) via linear dimers which are coupled to linear tetramer, with a final cyclization step. Thus, 45 g II in 500 mL CHCl₃ was treated with 150 mL SOCl₂ in the presence of 15 mL Et₃N to afford thiadiazole acid chloride III (R = Cl, 75% yield), which was hydrolyzed to the acid III (R = OH, 78% yield) with 10% KOH. III (R = OH, 18 g) and II Et ester (18 g) were coupled to form benzimidazole ester dimer IV (R = Et, 85%) by cyclodehydration in the presence of N-diphenylphosphinyl-N'-methylpiperazine (120 g in 500 mL CH₂Cl₂) and triflic anhydride (33.64 mL in 200 mL CH₂Cl₂). IV (R₁ = H, 2.96 g) and diamino ester dimer V (2.96 g) [prepared by deprotection of IV (R = Et) with SnCl₂/EtOH/HCl] were similarly coupled by cyclodehydration to afford 60% protected tetramer ester VI. In the final step, heating 264 mg tetramer diamino ester VII neat [prepared by deprotection of VI, as before] at 300° afforded 7% I.

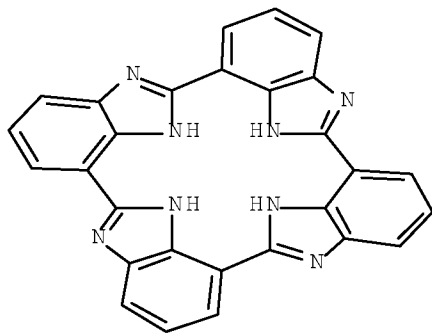
IT 25797-72-2P

(preparation of, IR spectrum and solubility of, and absence of fluorescence of)

RN 25797-72-2 HCAPLUS

CN 4,6:10,12:16,18:22,24-

Tetraiminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine (CA INDEX NAME)



IC ICM C07D0233-54

INCL 540465000

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 22, 26, 78

IT 25797-72-2P

(preparation of, IR spectrum and solubility of, and absence of fluorescence

of)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
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Anon				US 3481945 A		HCAPLUS
OS.CITING REF COUNT:	4	THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)				

L20 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1970:56703 HCAPLUS Full-text

DOCUMENT NUMBER: 72:56703

ORIGINAL REFERENCE NO.: 72:10405a

TITLE: Tetrabenzimidazole

INVENTOR(S): Nichols, Larry D.; Obermayer, Arthur S.

PATENT ASSIGNEE(S): Moleculon Corp.

SOURCE: U.S., 3 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 3481945	A	19691202	US 1966-600560	19661209
PRIORITY APPLN. INFO.:			US 1966-600560	A 19661209

GI For diagram(s), see printed CA Issue.

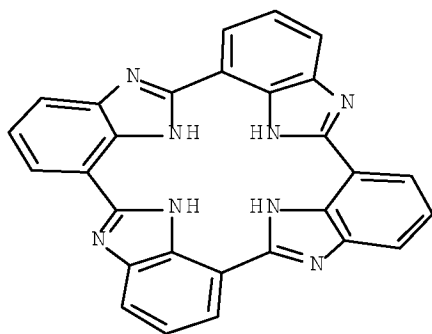
AB Tetrabenzimidazole (I) and its Cu chelate (II) were prepared by condensing 2,3-(H₂N)₂C₆H₃CO₂H (III) in the presence of CuCl₂ and 3-Me-C₆H₄OH (IV). Thus, a mixture of III 0.5, aqueous CuCl₂ 0.14, and IV 1.42 g was refluxed for 4 hr at 200°, and treated with 10 ml MeOH to give 0.11 g dark platelets, m. >400°, which were washed with MeOH. The washings were evaporated and the residue slurried with Me₂CO to yield 0.19 g product containing 50% I, m. 270°, and 50% II, m. >50°. II was soluble in and unaffected by H₂SO₄, and moderately soluble in MeOH, IV, dilute H₂SO₄, and Me₂SO. Both acidic and neutral solns. fluoresced. II may be useful as dyes, semiconductors, and chelating agents.

IT 25797-72-2DP, 4,6:10,12:16,18:22,24-
Tetraiminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine, copper
complexes 25797-72-2F
(preparation of)

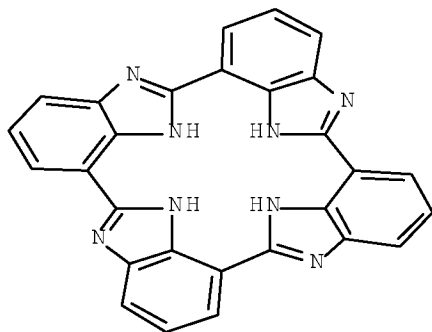
RN 25797-72-2 HCAPLUS

CN 4,6:10,12:16,18:22,24-

Tetraiminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine (CA
INDEX NAME)



RN 25797-72-2 HCAPLUS
 CN 4,6:10,12:16,18:22,24-
 Tetraaminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine (CA
 INDEX NAME)



IC C07D0049-38A; C07F0001-08B; C08G0033-02B
 INCL 260299000
 CC 40 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
 IT 25797-72-2DP, 4,6:10,12:16,18:22,24-
 Tetraaminotetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine, copper
 complexes 25797-72-2P 27199-20-8P
 (preparation of)
 OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS
 RECORD (5 CITINGS)